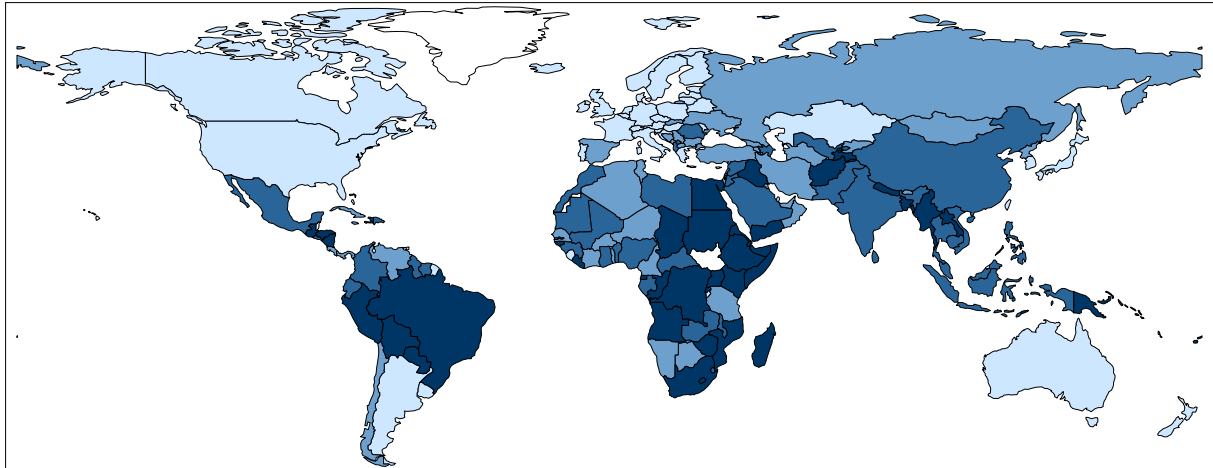


Online Appendix for Ethnic Inequality, Democratic Transitions, and Democratic Breakdowns: Investigating an Asymmetrical Relationship

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Country graphs (cross-sectional map)

Figure A1: Expert-coded measure of inequality in public service provision between ethnic groups (2020)



Note: Darker shades indicate higher levels of ethnic inequality.

Figure A1 maps the measure in year 2020 to provide the reader with a sense of the data, including differing coverage and scoring of particular countries. As expected, the measure assigns relatively high scores to Guatemala, Brazil, Peru, Bolivia, South Africa, and Kenya where case studies have shown ethnic inequalities to be pronounced (Canelas and Gisselquist 2018; Figueroa and Barrón 2005; Leivas and dos Santos 2018; Molina 2007).

Country graphs (time-series)

Graphs are presented by country name for exposition purposes. Note that several countries shown separately here share the same country ID in the analysis (e.g. Germany/West Germany or USSR/Russia).

Figure A2: E. Europe and C. Asia

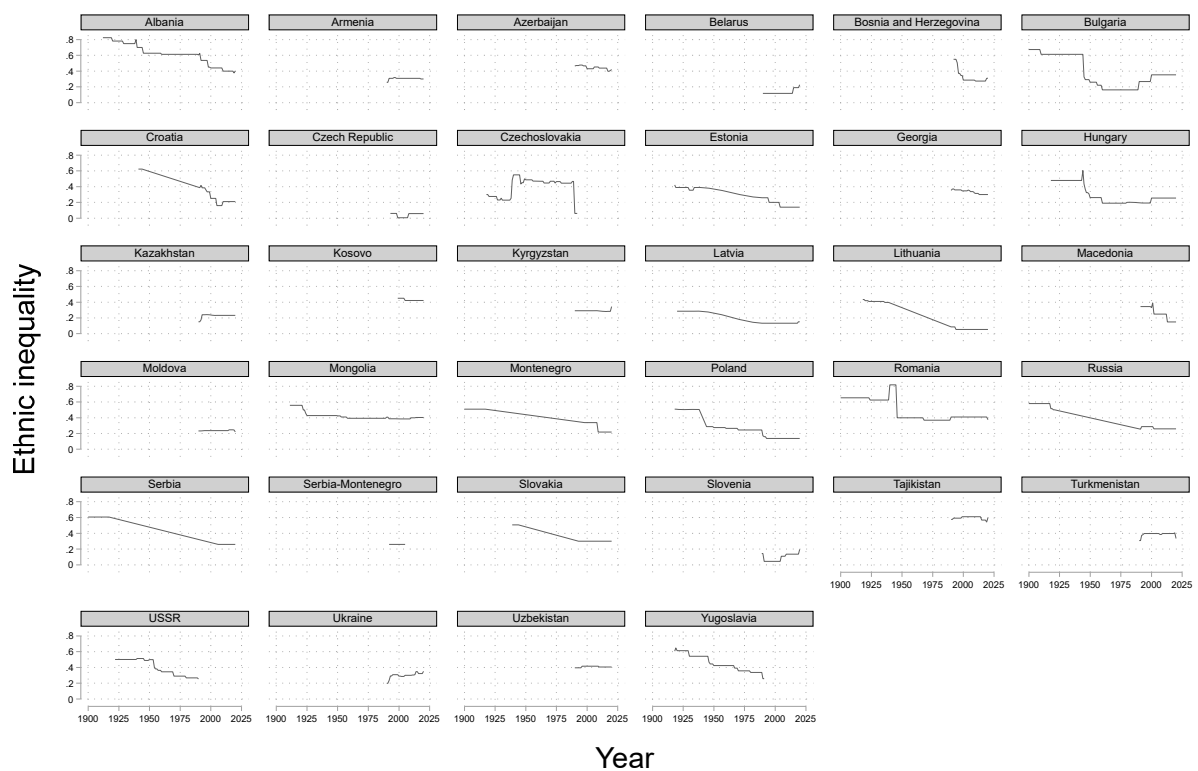


Figure A3: *L. America and the Carribean*

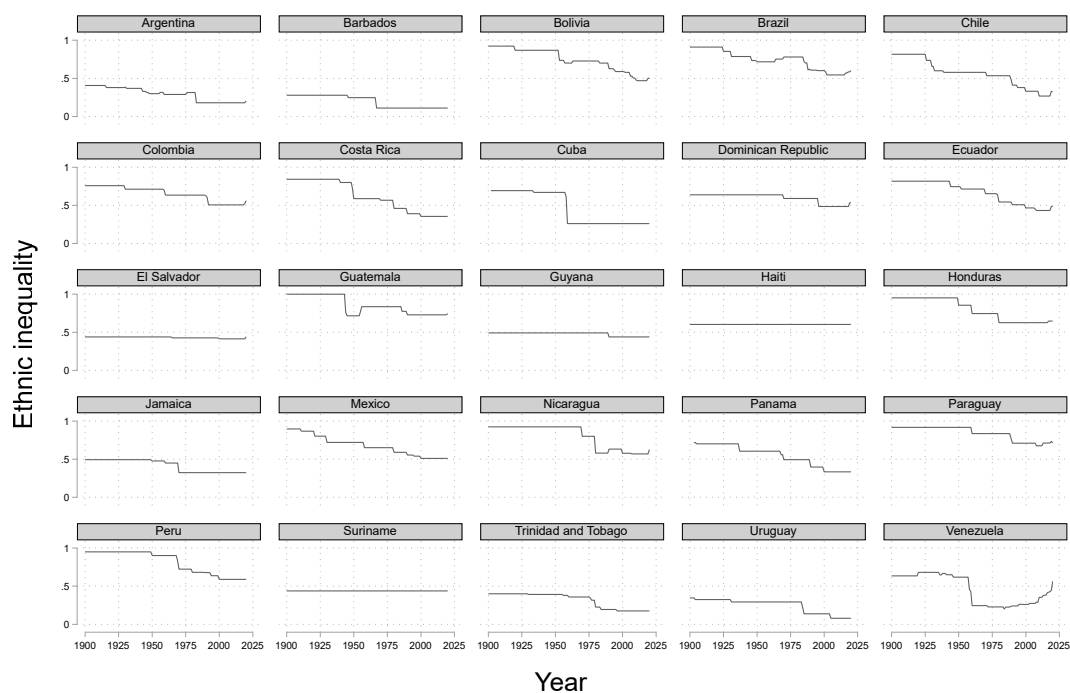


Figure A4: *MENA*

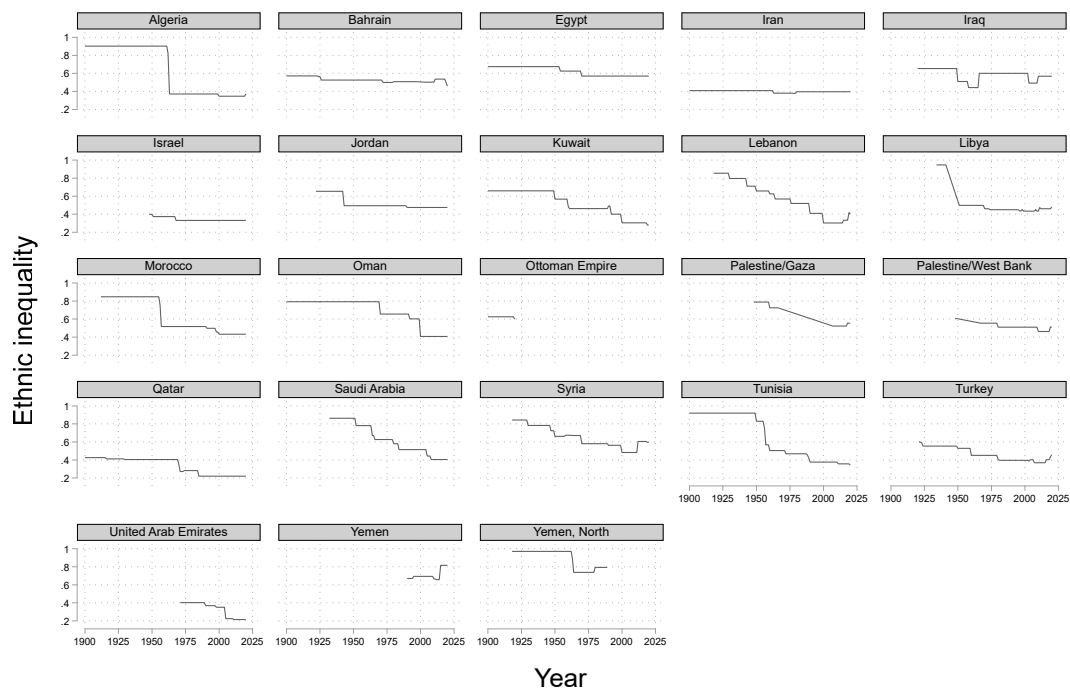


Figure A5: Sub-Saharan Africa (Panel A and B)

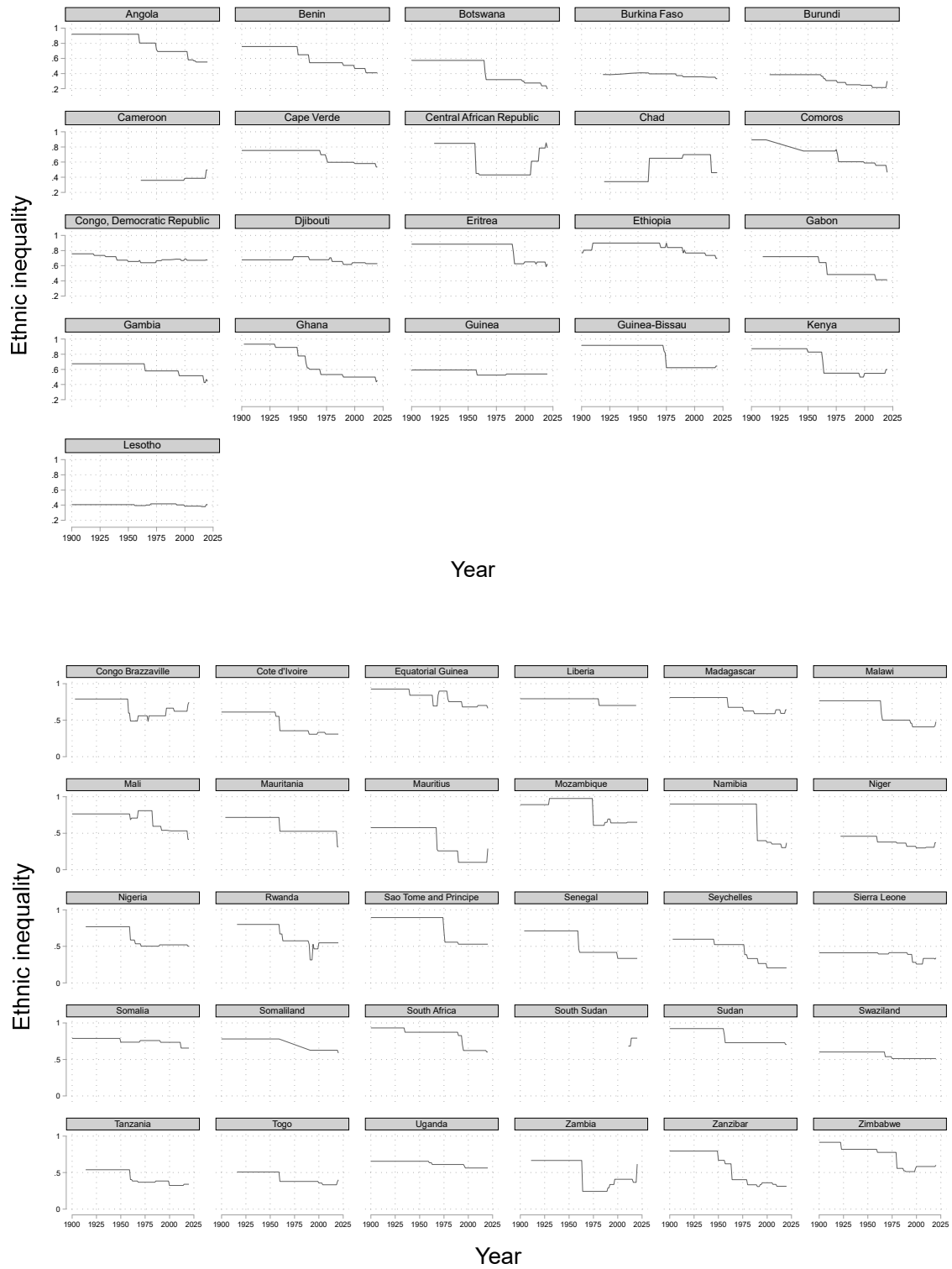


Figure A6: W. Europe and N. America

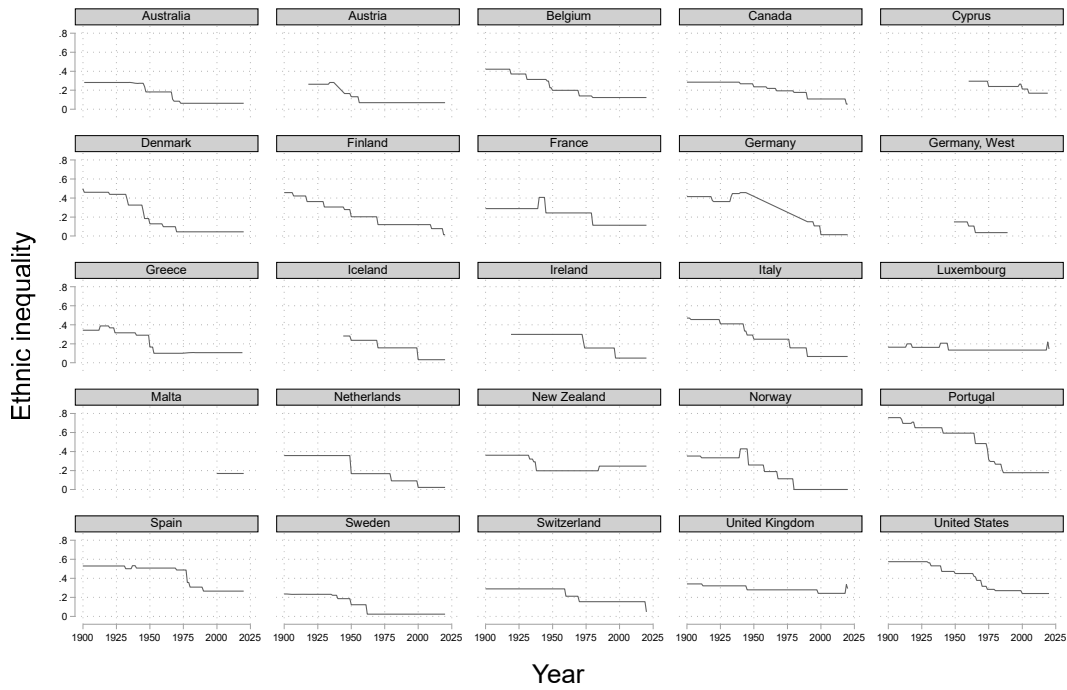
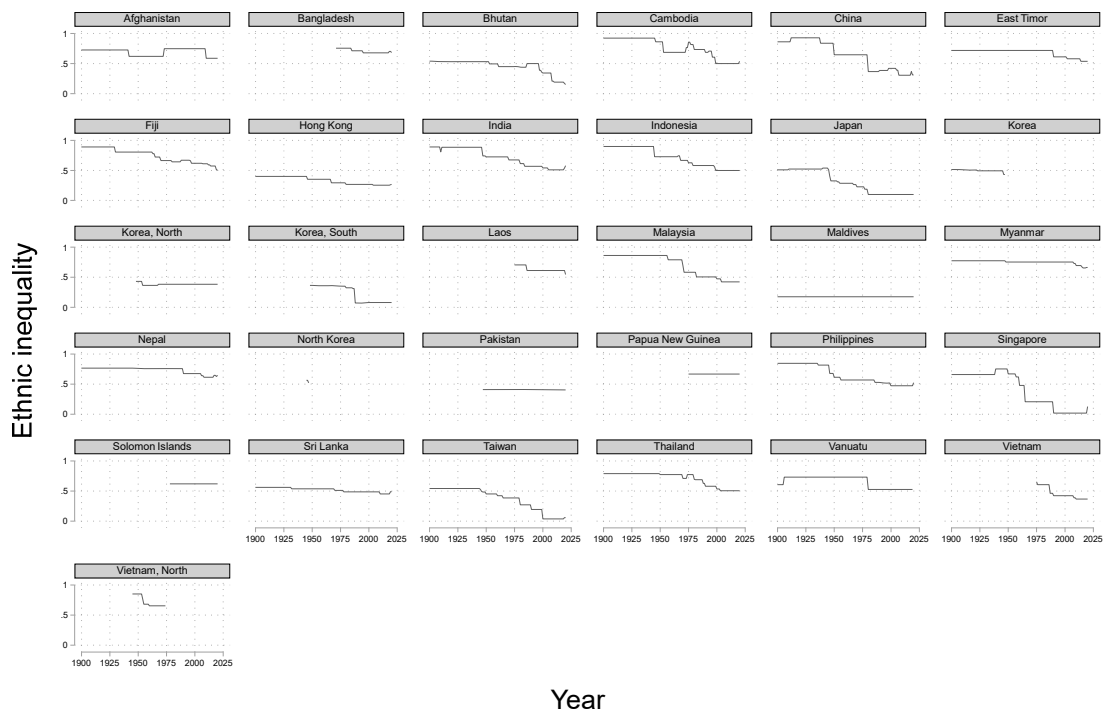


Figure A7: Asia and Pacific



Supplementary mechanism assessments

Group-level AMAR data

Using group-level expert-coded data from All Minorities at Risk (AMAR) dataset (Birnie et al. 2017), I provide an exploratory analysis of the suggested mechanisms. The *economic discrimination index* ranges from 0 to 4 with 0 indicating no group discrimination and 4 indicating formal exclusion and repressive public policies that restrict the group's economic opportunities. The sample covers 346 groups, mainly after 1980.

The *economic grievance index* ranges from 0-2 with 0 indicating that no economic grievances were expressed, 1 indicates grievances focused on ending discrimination and 2 grievances focused on creating or strengthening remedial policies.

The *protest* variable ranges from 0 to 5, where 0 indicates no reported protests and 5 indicates large demonstrations. The rebellion variable ranges from 0 (no reported) to 7 (full civil war). *Repression of group members* engaged in nonviolent collective action (e.g. politicians, human rights leaders, nonviolent protesters, etc.) ranges from 0 (none reported) to 5 (violent coercion, killing). Repression of group members engaged in violent collective action (e.g. guerillas, rioters) ranges from 0 (none reported) to 5 (violent coercion, killing).

To analyze the data, I employ OLS regression, controlling for country-level GDP/cap and country dummies, with errors clustered at the group-level. Table A2 shows that that in autocracies, economic discrimination (serving as a rough proxy of socioeconomic disadvantage) is associated with economic grievances in autocracies. As shown in Table A3, these grievances are associated with increased protest behavior and a greater likelihood of rebelling (bottom-up), and higher levels of group suppression (top-down).

Looking at the democratic sample in Tables A4-A5 also reveals a pattern consistent with the mechanism outlined for democratic breakdowns. Economic discrimination is associated with group-based economic grievances (A4), which are in turn associated with increased protest behavior and a greater likelihood of rebelling (A5). This supports the idea that ethnic inequality increases the probability political instability through mass mobilization. Compared with the autocratic sample in Table A3, economic grievances have a stronger relationship with protests and a weaker relationship with repression. This fits the logic of the overall argument according to which group mobilization is easier and less likely to be met with repression in democracies.

Autocratic sample

Table A2: Association between economic discrimination and economic grievances (autocratic sample)

	(1) Economic grievances
Economic discrimination	0.290*** (0.028)
GDP/cap	-0.017 (0.093)
Constant	1.172*** (0.225)
N	2211
Country FE	✓

Standard errors clustered by groups in parentheses. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3: Association between economic grievances and protests, rebellion, and repression (autocratic sample)

	(1) Protests	(2) Rebellion	(3) Repression of violent collective action	(4) Rep. of nonviolent collective action
Economic grievances	0.378*** (0.042)	0.362*** (0.078)	0.500*** (0.146)	0.482*** (0.123)
GDP/cap	-0.049 (0.116)	-0.396* (0.182)	0.274 (0.203)	0.246* (0.123)
Constant	2.079*** (0.309)	0.672 (0.584)	1.481*** (0.440)	0.130 (0.207)
N	2217	2203	1449	1467
Country FE	✓	✓	✓	✓

Standard errors clustered by groups in parentheses. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Democratic sample

Table A4: Association between economic discrimination and economic grievances (democratic sample)

	(1) Economic grievances
Economic discrimination	0.335*** (0.041)
GDP/cap	0.021 (0.188)
Constant	0.774 (0.552)
N	1946
Country FE	✓

Standard errors clustered by groups in parentheses. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A5: Association between economic grievances and protests, rebellion, and repression (democratic sample)

	(1) Protests	(2) Rebellion	(3) Repression of violent collective action	(4) Rep. of nonviolent collective action
Economic grievances	0.535*** (0.061)	0.240** (0.076)	0.334* (0.130)	0.287*** (0.067)
GDP/cap	0.233 (0.271)	0.107 (0.238)	0.796* (0.331)	0.703† (0.366)
Constant	2.017** (0.753)	0.111 (0.976)	-2.677** (0.966)	-1.905† (1.084)
N	1960	1959	1162	1165
Country FE	✓	✓	✓	✓

Standard errors clustered by groups in parentheses. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Country-level BTI data

In this section, I test a series of empirically observable implications of the main theoretical argument using expert-coded data from the Bertelsmann Transformation Index (BTI 2022), which provides a range of country-level indicators of political and economic development on a biannual basis from 2006-2022.

In this analysis, I include four BTI indicators that capture different dynamics consistent with the outlined theoretical argument. The first indicator *State identity*, asks to what extent all relevant groups in society agree about citizenship and accept the nation-state as legitimate. The variable is scaled from 0-10 with 0 indicating that the legitimacy of the nation-state is questioned fundamentally and that different population groups compete for hegemony and deny citizenship to others. 10 denotes that a large majority of the population accept the nation-state as legitimate, and that all individuals and groups enjoy the right to acquire citizenship without discrimination.

Second, I include an indicator capturing whether *equality of opportunity* exists. A 0 indicates that Equality of opportunity is not achieved, and that women and/or members of ethnic, religious and other groups have only very limited access to education, public office and employment, and there are no legal provisions against discrimination. Conversely, a 10 indicates that equality of opportunity is achieved and that a comprehensive and effective legal and institutional framework for the protection against discrimination.

Third, I include a variable capturing how serious *social, ethnic and religious conflicts* are. 0 indicates that there are no violent incidents based on social, ethnic or religious differences, whereas 10 indicates that civil war or widespread violent conflict based on social, ethnic or religious differences is present. Fourth, I include a measure of *Cleavage/conflict management*, which captures to what extent the political leadership is able to moderate cleavage-based conflict. 10 indicates that the “political leadership depolarizes cleavage-based conflict and expands consensus across the dividing lines”, whereas a 0 indicates that the political leadership exacerbates existing cleavages for populist or separatist purposes.

To test the implications, I check whether ethnic inequality predicts the mentioned BTI variables in the expected direction, both in autocracies and democracies. Table A6 presents the results of a series of OLS regressions of the selected BTI variables on the V-Dem measure of ethnic inequality. Due to the short time-series, I employ region-fixed effects, instead of country fixed-effects. Column 1-4 presents the results for autocracies, whereas 5-8 presents them for

democracies. Ethnic inequality is associated with lower agreement about citizenship and acceptance of the nation-state as legitimate (Columns 1 and 5). Ethnic Inequality is also associated with lower levels equal opportunity (Columns 2 and 6), more intensive conflicts (Columns 3 and 7) as well as less capable management of cleavages (4 and 8). Although the associations are generally stronger in autocracies, they can also be found in democracies. Overall, this analysis suggests that across regime type, ethnic inequalities are associated with a range of destabilizing dynamics, ranging from low identification with the state, citizenship disputes, unequal opportunities, conflict and poor management of cleavages.

Table A6: Ethnic inequality and BTI data

	Autocracies				Democracies			
	(1) State identity	(2) Equal opp.	(3) Conflict	(4) Cleavage	(5) State identity	(6) Equal Opp.	(7) Conflict	(8) Cleavage
Ethnic inequality	-5.211*** (1.076)	-4.648*** (0.822)	6.311*** (1.326)	-4.898*** (1.105)	-2.269* (0.885)	-2.077* (0.819)	4.057*** (1.004)	-2.417** (0.909)
GDP/cap	-0.038 (0.149)	0.478** (0.172)	-0.501* (0.214)	0.143 (0.206)	0.377* (0.157)	1.378*** (0.160)	-0.562** (0.208)	0.623*** (0.168)
N	472	472	472	472	552	552	552	551
Region F-E	✓	✓	✓	✓	✓	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Formal mediation analysis

As a supplement to the investigation of the mechanisms in the main text, I also present results from a formal mediation analysis. To this end, I use a Stata package (“medeff”) developed by Hicks and Tingley (2011) – which builds on work by Imai et al. (2011) – to estimate the average causal mediation effect (ACME) of each of the variables capturing the two discussed theoretical mechanisms. The method enables an estimation of the ACME conditional on the identifying assumption of “sequential ignorability”, which requires that the treatment and mediator of interest are conditionally exogenous. As argued in the main text, the assumption of exogeneity does not appear realistic, which is why a simpler, more correlational approach was prioritized there.

The package only supports binary treatment variables. As a pragmatic solution, I split the treatment variable (ethnic inequality) at the median, assigning increases in ethnic inequality “1” and decreases “0”.¹ This step necessarily leads to less efficient estimates.

Table A7: Mediators between Ethnic Inequality and Democratic Transitions

Mediator	ACME	% of total effect mediated
Bottom-up mechanism		
Mass mobilization	0.0013	27
Pro-democratic mass mobilization	0.0033*	64
Ethnically-based regime-opposition	0.0004	8
Non-violent campaign onset	0.0000	0
Violent campaign onset	0.0000	0
Top-down mechanism		
Repression (general)	-0.0044*	91
Repression (group-specific)	-0.0034*	75
Repression of campaign	0.0002	2

*Indicates that 95% confidence intervals for the ACME do not include zero. Estimates rely on country- and year fixed effects, controls for GDP per capita with standard errors clustered on countries.

¹ The employed “medeff” package for Stata does not have a fixed effects option, and I have therefore demeaned the variables manually instead.

With these caveats in mind, Table A7 present the results for the democratic transition mechanism. Starting with the “bottom-up” mechanism, the mass mobilization, pro-democratic mass mobilization and ethnic regime opposition variables are signed in the expected, positive direction. In particular, the pro-democratic mass mobilization variable appears to mediate the relationship between ethnic inequality and democratic transitions. Meanwhile, the NAVCO campaign variables do not seem to mediate the relationship. This contrast with the analysis in main text, where ethnic inequality is associated with both violent and non-violent campaigns, and where non-violent campaigns are associated with a higher likelihood of democratization. Continuing to the “top down” mechanism, both general and group-specific repression appear to moderate the relationship in the expected, negative direction. Similarly to the related exercise in the main text, the repression of specific campaigns variable shows no clear pattern.

Looking at democratic breakdowns in Table A8, all potential mediators are signed in the expected, positive direction. Moreover, polarization, mobilization for autocracy, political violence and the two variants of power concentration appear to mediate the relationship between ethnic inequality and breakdown. The most significant difference compared with the correlational analysis in the main text is that coup attempts are not significant.

To summarize, although the results from these analyses should be interpreted with caution, it is reassuring that they are in line with the correlational mechanism study in the main text.

Table A8: Mediators between Ethnic Inequality and Democratic Breakdowns

Mediator	ACME	% of total effect mediated
Political polarization		
Political polarization	0.0064*	61
Mass anti-dem. behavior		
Mobilization for autocracy	0.0044*	41
Ethnic regime opposition	0.0007	6
Political violence	0.0051*	49
Violent campaign onset	0.0010	8
Elite anti-dem. behavior		
Power concentration (jud.)	0.0042 *	41
Power concentration (leg.)	0.0031*	35
Coup Attempts	0.0037	45

* Indicates that 95% confidence intervals for the ACME do not include zero. Estimates rely on country- and year fixed effects, controls for GDP per capita with standard errors clustered on countries.

Implication test: ethnic diversity and democratic breakdowns

The following analysis examines whether various measures of ethnic heterogeneity are related to democratic breakdowns. If my argument is correct that ethnic inequality is particularly inauspicious for democratic stability, I should *not* be able to find a relationship with measures of ethnic heterogeneity – or at least, it should be much weaker.

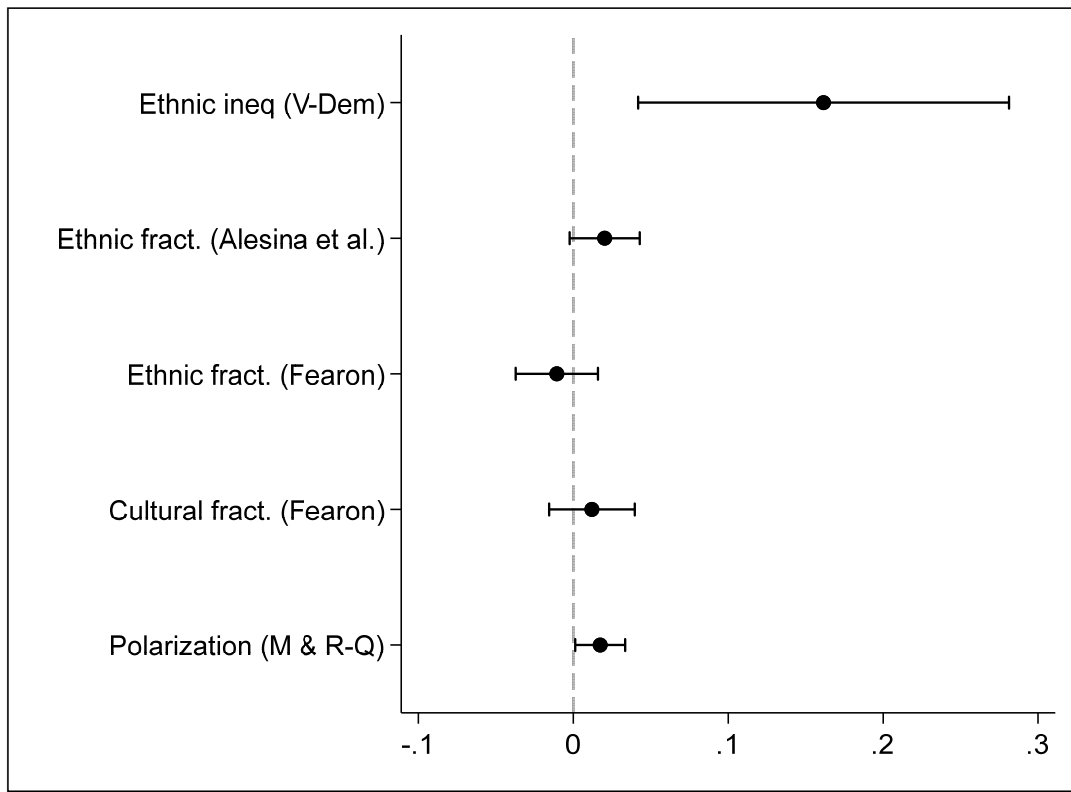
To examine this proposition, I use the following, well-known ethnic heterogeneity measures: a measure of linguistic-ethnic fractionalization by Alesina et al. (2003); a measure of ethnic fractionalization by Fearon (2003); a measure of cultural (linguistic) fractionalization that accounts for linguistic distances among groups also by Fearon (2003); and a measure of ethnic polarization, using the index by Montalvo and Reynal-Querol (2005). The latter achieves a maximum score when a country consists of two groups of equal size. These measures are time-invariant. To make the estimates comparable to the main findings and the supplement analysis of non-ethnic inequality, I have extended (extrapolated) the time-invariant measures to the period between 1960 and 2020.²

The Results in Figure A8 shows that there is a weak positive relationship between the Alesina et al. fractionalization measure and breakdowns (significant at the 0.1 level). The ethnic fractionalization measure by Fearon is negatively, though not statistically significantly, associated with democratic breakdowns. Meanwhile, the cultural fractionalization measure by Fearon is positively associated with democratic breakdowns, but also not statistically significant. Finally, the coefficient for ethnic polarization is positive and statistically significant at the 0.05 level. Note that across the three heterogeneity measures, the coefficients are very small compared to the one for ethnic inequality.

Overall, this suggests that ethnic inequality between ethnic groups is a much stronger predictor of democratic breakdowns than various measures of ethnic heterogeneity.

² Restricting the sample for the V-Dem ethnic inequality measure to 1960-2020 yields very similar results (see Table A19).

Figure A8: Measures of ethnic heterogeneity and democratic breakdown



Notes: Lines indicate 95 % confidence intervals. The analysis of the heterogeneity measures rely on OLS estimators with decade dummies and controls for GDP per capita. For sake of comparison the variables have been rescaled to range from 0-1.

Country examples: democratic breakdowns

The following section provides country examples, which illustrate the argument linking ethnic inequality and democratic breakdown. As mentioned in the main text, such dynamics have already been identified in comparative case studies, which suggests that distributional conflict between ethnic groups and ensuing polarization contributed to democratic breakdowns in multiple countries, both during the interwar years (Poland, Lithuania, Yugoslavia, Germany, Latvia, and Spain) and after 1945 (Pakistan, Bangladesh, Indonesia, Myanmar, Sudan, Nigeria, Lebanon, Sri Lanka, and Ecuador) (Andersen 2017, ch. 8-10). Other relevant cases include Guatemala and Peru, in which ethnic inequality has contributed to democratic breakdown (Houle 2015). In the following, I go into more detail with two additional country examples.

Fiji

Fiji's 1987 general election was won by an Indo-Fijian coalition party with overwhelming support by the Indo-Fijian community, but with very little support from ethnic Fijians. Two military coups occurred that same year, led by Colonel Sitiveni Rabuka, which were followed by a new Constitution that institutionalized the political dominance of ethnic Fijians. A third coup led by a group of ethnic Fijian nationalists followed the elections of 1999, which ultimately resulted in the discharge of the first Indo-Fijian prime Minister Mahendra Chaudhry' (McCarthy 2011, 566).³ In both coup years, elected governments with a significant Indo-Fijian participation were clearly seen by elements of the indigenous Fijian community as posing a redistributive challenge to existing prerogatives (Haggard, Kaufman, and Teo 2012, 77-78; Lawson 1991, 201; McCarthy 2011, 563). The Island State's unstable democratic trajectory illustrates a more general dynamic: that dominant groups may seek to undermine democratic competition to safeguard their socioeconomic interests, and that distributive conflicts may become particularly destabilizing for democracy if ethnic categories and economic inequality overlap.

Nepal

Nepal's democratization in 1990 did not lead to political inclusion and significant socioeconomic advances for disadvantaged groups. Despite the demands for power-sharing institutions by

³ "Fiji's coup of 2006 was unlike the previous coups because the event was not aimed at protecting the interests of indigenous Fijians against ethnic Indians (McCarthy 2011).

historically excluded groups,⁴ the new constitution adopted a first-past-the-post method, a unitary state structure, included discriminating constitutional articles, and Nepal officially remained a Hindu kingdom (Lawoti 2008, 374-76; 2010b, 10). These institutions helped to continue the historical dominance of the state by hill "high"-caste Hindus (CHHE) (Lawoti 2010b; Lawoti and Hangen 2013, 14, 18). Unsurprisingly, non-CHHE groups were generally unsatisfied with the 1990 Constitution (Hangen 2010, 32-33; Lawoti and Hangen 2013, 15; Shakya 2010, 53).

In 1996, an armed conflict between Maoist rebels and the state erupted that lasted 10 years and left more than 13,000 people dead and hundreds of thousands displaced. Although the rhetoric of the movement was predominantly ideological, mobilization occurred mainly along ethnic and regional lines (Brown 2011, 295). The massacre of King Birendra and his immediate family in 2001 created further instability. The new king, Gyanendra, dismissed an elected government in 2002 and in February 2005 seized direct control of the country, dismantling democracy until 2006, when a popular movement forced the king resign.

Several factors contributed to the democratic breakdown in 2002, some of which directly relate to group inequalities. Nepal was challenged by grave political instability with disputes within and between major parties and short-lived government (Hangen 2010, 23). Moreover, the continued political and socioeconomic inequality formed the basis for the mobilization of excluded groups by Maoist leaders (cf. Brown 2011; Fukuda-Parr 2011, 97; Lawoti 2010b, 18; Tiwari 2010, 33-34, 43). The continued exclusion of large marginalized groups lead to widespread perceptions that the democratic polity was illegitimate (Kantha 2010). This meant that anti-democratic forces could cultivate the excluded and dissatisfied groups. For instance, after the dismissal of the elected government in 2002, the King's new cabinet included a higher number of individuals from marginalized groups compared to those formed by the political parties during the 1990 (Lawoti 2008, 373). In sum, there are clear indications that a combination of political exclusion, socioeconomic inequality and lack of cultural recognition hindered the consolidation of democracy in Nepal.

⁴ The indigenous nationalities, Dalit and Madhesi collectively constitute more than two thirds of the population but have historically been politically excluded and discriminated against (Lawoti 2010a, 18).

Robustness tests

Controls for inequality at time of transition

To address potential endogeneity issues, I present results in Table A9 that control for the level of ethnic inequality in the year of democratic transition. Reassuringly, these results remain similar to the main results.

Table A9: Controls for ethnic inequality in year of transition

	Breakdown		
	(1)	(2)	(3)
Ethnic inequality	0.171* (0.077)	0.166* (0.078)	0.169* (0.079)
Ethnic ineq. at transition	-0.015 (0.100)	-0.011 (0.105)	0.012 (0.092)
GDP pc.		-0.004 (0.015)	-0.023 (0.019)
GDP growth			-0.075 (0.055)
Oil			0.004* (0.002)
Regional democracy			-0.082* (0.038)
State capacity			0.000 (0.001)
N	5323	5311	3409
Countries	132	131	106
Country F-E	✓	✓	✓
Year F-E	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Controls for inequality in public services by socio-economic status

The V-Dem ethnic inequality measure could be associated with a range of other features of poor democratic performance rather than ethnic tensions. To further examine this potential confounding, the specification in Table A10 below controls for V-Dem's measure of inequality in access to public services by socio-economic group (i.e., not ethnicity). The latter variable may also be associated with poor democratic performance, though without capturing dynamics specific to ethnic inequality, which is the variable of interest. The results below are very similar to the main specification, indicating that omitted variables related to general poor performance is unlikely to drive the findings.

Table A10: Controls for public services by socio-economic status

	Transitions			Breakdowns		
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic inequality	-0.002 (0.027)	0.012 (0.032)	0.084 (0.061)	0.168* (0.076)	0.167* (0.076)	0.175* (0.086)
Public services	-0.008 (0.028)	-0.005 (0.032)	-0.097† (0.054)	-0.003 (0.075)	-0.009 (0.076)	-0.004 (0.090)
GDP pc.		0.004 (0.005)	0.019* (0.009)		-0.005 (0.014)	-0.023 (0.020)
GDP growth			-0.009 (0.017)			-0.075 (0.055)
Oil			-0.002 (0.002)			0.004* (0.002)
Regional democracy			0.124*** (0.030)			-0.082* (0.038)
State capacity			0.000 (0.000)			0.000 (0.001)
N	12335	9789	5533	5307	5295	3409
Countries	166	163	136	132	131	106
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0$.

Functional form

To see whether the relationship is non-linear (as suggested by Acemoglu and Robinson, 2005, for individual inequality), Figure A9 represents a binned scatterplot of the level of ethnic inequality against the probability of transitioning to democracy. There is a clear negative relationship. Meanwhile, there are no clear indications of an inverted U-shaped relationship. This is confirmed by inconclusive tests of a non-linear relationship by adding squared coefficients for ethnic inequality (Table A11).

Figure A9: Binned Scatterplot

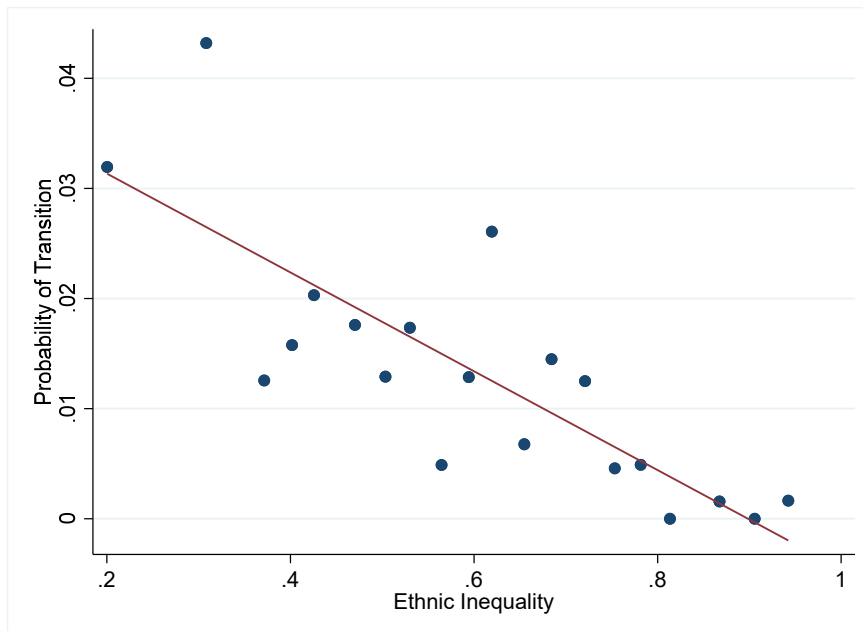


Table A11: Ethnic inequality (squared) and the probability of democratic transitions

	Transitions		
	(1)	(2)	(3)
Ethnic ineq.	0.042 (0.064)	0.080 (0.072)	0.023 (0.131)
Ethnic ineq. squared	-0.043 (0.051)	-0.060 (0.056)	-0.003 (0.093)
GDP pc.		0.006 (0.005)	0.021* (0.009)
GDP growth			-0.008 (0.017)
Oil			-0.002 (0.002)
Regional democracy			0.113*** (0.031)
State capacity			-0.000 (0.000)
N	12335	9789	5533
Countries	166	163	136
Country F-E	✓	✓	✓
Year F-E	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

† $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Transition type

It may be possible that ethnic inequalities only affect certain types of transitions, for instance, by exerting particularly strong pressure ‘from below’ for a transition. Based on a LIED variable capturing modes of transition, I distinguish between incumbent-led and cooperative transitions on the one hand, and opposition-led transitions on the other hand. The results indicate that the insignificant relationship applies to both types (Table A12).

Table A12: Ethnic Inequality and democratic transition by transition types

	Incumbent-led			Opposition-led		
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic inequality	0.000 (0.015)	0.017 (0.018)	0.027 (0.032)	-0.007 (0.009)	-0.007 (0.011)	0.019 (0.046)
GDP pc.		0.005 (0.004)	0.013 [†] (0.007)		-0.000 (0.003)	0.021* (0.009)
GDP growth			-0.003 (0.012)			-0.008 (0.017)
Oil			-0.002 (0.002)			-0.002 (0.002)
Regional democracy			0.065** (0.025)			0.113*** (0.030)
State capacity			-0.000 (0.000)			-0.000 (0.000)
N	12335	9789	5533	12335	9789	5533
Countries	166	163	136	166	163	136
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Breakdown type

Are these associations the same across different types of democratic breakdowns? Based on the lexical index of democracy, I have looked at two types of breakdowns based on the Lexical Index' disaggregated coding: incumbent-led (N=47) and coups (N=64). In Table A10, ethnic inequality is associated with a higher likelihood of democratic breakdown, both by means of incumbent-led reversals and coups. However, the association with coups appears to be slightly stronger.

Table A13: Ethnic inequality and democratic breakdown by type

	Incumbent-led			Coups		
	(1)	(2)	(3)	(4)	(5)	(6)
Ethnic inequality	0.064 [†] (0.033)	0.066 [†] (0.034)	0.058* (0.028)	0.102* (0.048)	0.095* (0.047)	0.115 [†] (0.066)
GDP pc.		0.004 (0.006)	0.001 (0.009)		-0.009 (0.013)	-0.024 (0.017)
GDP growth			-0.017 (0.030)			-0.059 (0.047)
Oil			0.001 (0.001)			0.003* (0.002)
Regional democracy			-0.012 (0.016)			-0.070* (0.031)
State capacity			0.000 (0.001)			0.000 (0.001)
N	5323	5311	3409	5323	5311	3409
Countries	132	131	106	132	131	106
Country F-E	✓	✓	✓	✓	✓	✓
Year F-E	✓	✓	✓	✓	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

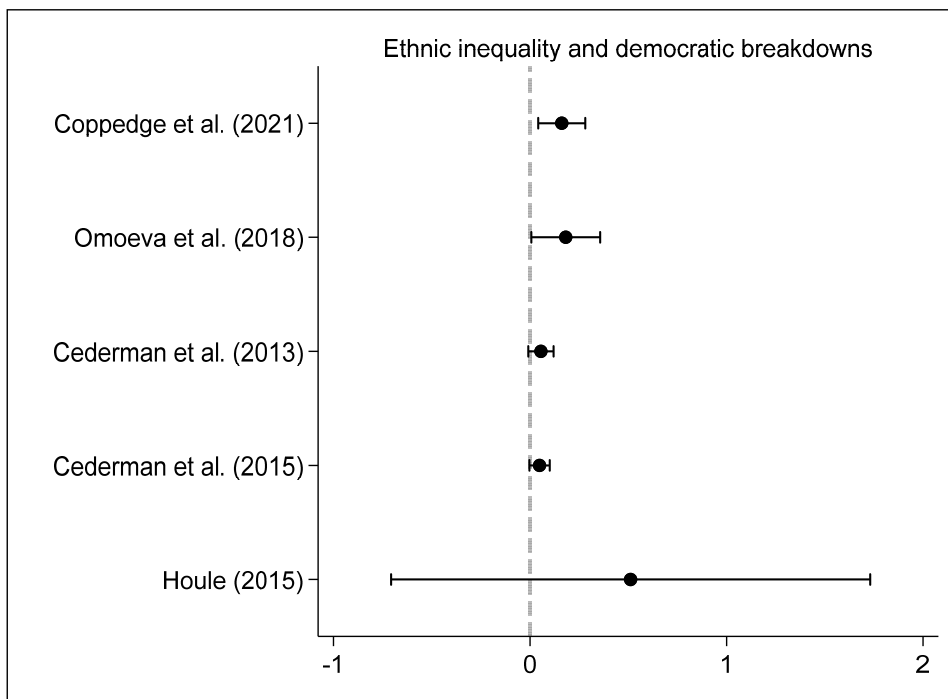
[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Alternative ethnic inequality measure for breakdown analysis

I also run the analysis with data from Houle (2015), which covers 89 countries from 1960 to 2007 that have been democratic for at least one year and are ethnically heterogeneous. This exclusive focus on democracies does not allow me to study the effects of transitions. However, I can compare the results with the breakdown analysis.

As Houle investigates how the effect of between-group inequality (BGI) is conditioned by within-group inequality (WGI), the shown coefficient represent this interaction term (BGIxWGI). A positive coefficient indicates that higher ethnic inequality increases the likelihood of democratic breakdown, meaning that this coefficient is comparable to the others. For comparability, all variables have been rescaled to range from 0-1.

Figure A10: Alternative ethnic inequality measures – with Houle (2015)



Notes: In line with the baseline results, the specifications with the Coppedge et al. and Omoeva et al. measures are estimated using OLS with two-way fixed effects and control for GDP per capita and errors clustered on country. The analyses of the Cederman et al. and Houle measures are estimated using OLS with decade dummies, controls for GDP per capita and errors clustered on country. The lines around the point estimates represent 95% confidence intervals.

While signed in the right direction, the coefficient for the Houle measure has very large confidence intervals and is not statistically significant (switching between probit and OLS with fixed effects does not alter this finding, see below). Moreover, only using the between-group inequality measures (and not the interaction term) also shows no strong results. In short, I am not able to fully reproduce my results with the measure by Houle. To some extent, this may reflect a small sample (around 1,496) compared with the Coppedge et al. (5,426) and Cederman et al. measures (1,971- 3,109). The sample for this analysis also has the lowest number of breakdowns (29) compared to 109 for the V-Dem measure or 62 for the Cederman et al. 2013 measure, which could strongly affect the results. At any rate, it is reassuring that all measures are signed in the right direction.

Below, I show the results for the Cederman et al. measures and the Houle measure with a probit specification. The coefficients for the Cederman et al. measures are both positive and significant at the 0.05 level. Meanwhile, the coefficient for the Houle variable (BGIXWGI) is positive and large, but very imprecisely estimated and not statistically significant.

Table A16: Alternative ethnic inequality measures with Probit

	(1) Cederman et al. (2013)	(2) Cederman et al. (2015)	(3) Houle (2015)
Ethnic Inequality	1.275*** (0.331)	0.731* (0.369)	
BGI X WGI			7.677 (7.677)
BGI			-5.306 (4.451)
WGI			0.400 (0.801)
GDP pc	-0.519*** (0.073)	-0.407*** (0.084)	-0.375** (0.132)
Observations	3109	1971	1496
Countries	111	87	67

Notes: probit estimates, decade dummies and control for GDP per capita. Standard errors clustered by country in parentheses. All independent variables lagged one year. † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

i.e., a measure of the proportion of the population which is excluded from political power because they are either actively discriminated against as a group, or because elite representatives do not hold political power at the national level. Second – and closely related – a measure of whether group members are subjected to “active, intentional, and targeted discrimination by the state, with the intent of excluding them from political power”, expressed as a percentage of the population.

In Table A24, I assess the possibility that the size of the excluded group(s) affects the relationship between ethnic inequality and democratic transitions. For instance, it could be that countries in which a very small group dominates the state are much less likely to democratize, whereas states with smaller excluded groups, are more likely to democratize, since the dominant groups are less fearful of extending democratic rights.

To assess this question, I extend the baseline specification and interact the ethnic inequality variable with the measures of ethnopolitical exclusion and discrimination. In column 1, the interaction term is positive and significant at the 0.1 level, which indicates that – other things being equal – higher levels of political exclusion increase the likelihood that more ethnically unequal countries democratize. In one interpretation, the combination of high socioeconomic ethnic inequality and extensive political exclusion of ethnic groups (i.e., that a large share of the population is excluded), creates even stronger pressures for democratization. Considering this relationship in more detail in Figure A11, however, indicates that this interactive relationship is rather weak, and nowhere is the relationship significantly different from 0. Moreover, the non-significant interaction term in Column 2 also suggests that there is no clear or consistent relationship.

In other words, there is no strong indication that the size of the excluded or discriminated groups affect the identified null finding for the relationship between ethnic inequality and democratic transitions.

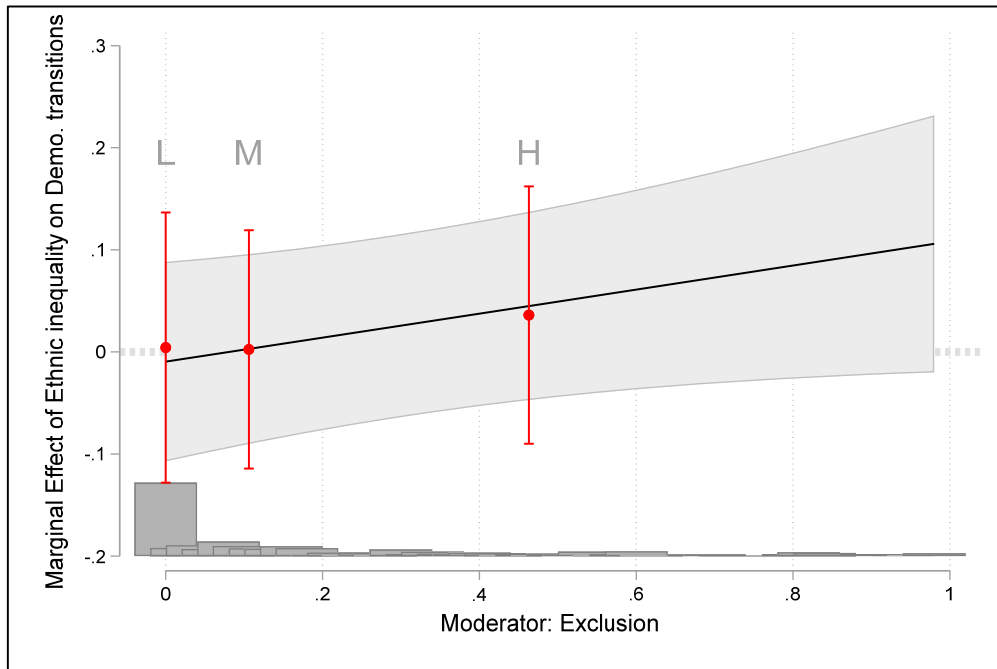
Table A24: Democratic transitions - interaction between ethnic inequality and size of excluded group

	(1) Exclusion (EPR)	(2) Discrimination (EPR)
Ethnic inequality	-0.010 (0.050)	0.018 (0.046)
Ethnic exclusion	-0.086 [†] (0.044)	-0.036 (0.047)
Inequality X Exclusion	0.118 [†] (0.066)	0.020 (0.084)
GDP pc.	0.012 (0.008)	0.014 [†] (0.008)
Observations	5554	5554
Countries	135	135
Country F-E	✓	✓
Year F-E	✓	✓

Standard errors clustered by country in parentheses. All independent variables lagged one year.

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure A11: Democratic Transitions - Interaction between ethnic inequality and size of excluded group



Note: The plots display the marginal effect of ethnic inequality on democratic transitions conditional on the ethnic exclusion. The black lines indicate continuous marginal effects computed directly from the linear specification with 95% confidence intervals (shaded areas). The vertical point ranges display the marginal effects of democracy along with 95% CIs at the median of each tercile of the exclusion variable. The histograms show the distribution of exclusion

to provide a sense of the empirical relevance of the range of exclusion levels for which ethnic inequality is statistically significant. In these, the total height of the stacked bars refers to the distribution of the moderator in the pooled sample.

What about democratic breakdowns? Could the relationship between ethnic inequality and democratic breakdowns be moderated by the level of exclusion, e.g. if minority representatives are excluded from power? Repeating the exercise from above with the same measures, Table A25, Column 1 shows that there is a statistically significant interaction effect at the 0.1 level. This indicates that the effect of ethnic inequality on democratic breakdowns becomes stronger when larger shares of the population are excluded from power. This is further investigated in Figure A12 below, which shows the same pattern – as levels of ethnopolitical exclusion increase, the effect of socioeconomic ethnic inequality on democratic breakdown grows.

Meanwhile, Column 2 does not indicate an interaction effect. Here, ethnic inequality and ethnopolitical discrimination (at the 0.1 level) appear to have independent effects on democratic breakdowns.

While not robust to the measure employed, there is some indication that the destabilizing effect of ethnic inequality is compounded by high levels of ethnopolitical exclusion, which is in line with hypotheses by Stewart (2021, 2010). That said, these analyses constitute very preliminary assessments, which require further investigation and robustness checks.

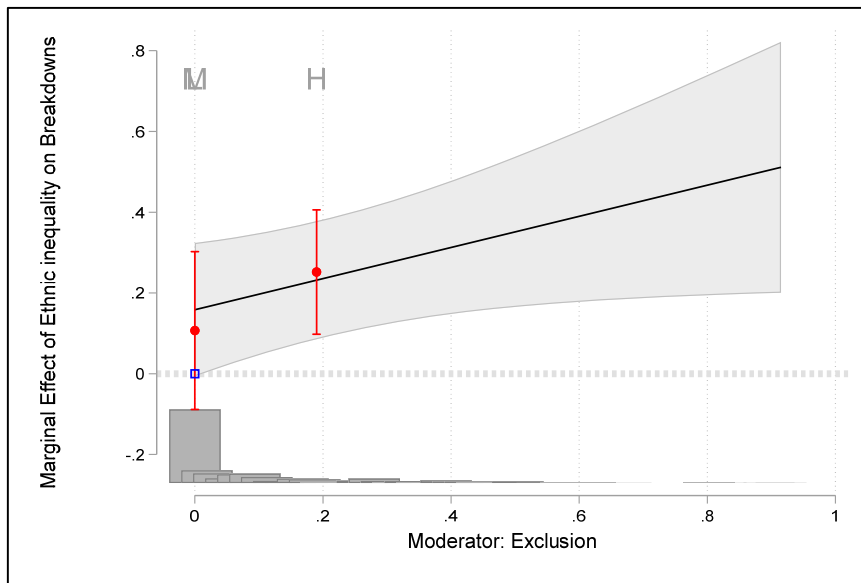
Table A25: Democratic breakdowns - interaction between ethnic inequality and size of excluded group

	(1) Exclusion (EPR)	(2) Discrimination (EPR)
Ethnic socioeconomic inequality	0.159 [†] (0.084)	0.226 ^{**} (0.077)
Ethnic political exclusion	-0.058 (0.084)	0.429 [†] (0.221)
Inequality X Political exclusion	0.386 [†] (0.196)	-0.484 (0.342)
GDP pc.	-0.009 (0.017)	-0.005 (0.017)
Observations	4317	4317
Countries	126	126

Standard errors clustered by country in parentheses. All independent variables lagged one year.

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure A12: Democratic breakdowns - Interaction between ethnic inequality and size of excluded group



Note: The plots display the marginal effect of ethnic inequality on democratic breakdowns conditional on ethnic exclusion. The black lines indicate continuous marginal effects computed directly from the linear specification with 95% confidence intervals (shaded areas). The vertical point ranges display the marginal effects of ethnic inequality along with 95% CIs at the median of each tercile of the exclusion variable. The histograms show the distribution of exclusion to provide a sense of the empirical relevance of the range of exclusion levels for which ethnic inequality is statistically significant. In these, the total height of the stacked bars refers to the distribution of the moderator in the pooled sample.

Test for influential observations

The geographically and temporally restricted samples above did not indicate that certain groups of countries or regions were driving the results. In the following, I provide additional analyses testing for influential observations.

Below, I have calculated DFBETA values, which reflect individual observations' influence, i.e. how much the coefficient for a given variable would change, if it was left out of the estimation. An observation is typically assumed to be influential if DFBETA is numerically larger than $2/\sqrt{n}$ – others employ the less restrictive threshold of 1.

Lithuania	1926	1	0.249484
Luxembourg	1934	0	0.038322
Luxembourg	1936	0	0.036213
Romania	1920	1	-0.05659
Romania	1930	1	-0.08524
Yugoslavia	1929	1	0.173028
Serbia	2020	1	-0.06863

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